

Tamás Mátrai

Covering Σ_ξ^0 -generated ideals by Π_ξ^0 sets

Comment.Math.Univ.Carolin. 48,2 (2007) 245-268.

Abstract: We develop the theory of topological Hurewicz test pairs: a concept which allows us to distinguish the classes of the Borel hierarchy by Baire category in a suitable topology. As an application we show that for every Π_ξ^0 and not Σ_ξ^0 subset P of a Polish space X there is a σ -ideal $\mathcal{I} \subseteq 2^X$ such that $P \notin \mathcal{I}$ but for every Σ_ξ^0 set $B \subseteq P$ there is a Π_ξ^0 set $B' \subseteq P$ satisfying $B \subseteq B' \in \mathcal{I}$. We also discuss several other results and problems related to ideal generation and Hurewicz test pairs.

Keywords: Borel σ -ideal, Hurewicz test

AMS Subject Classification: Primary 54H05; Secondary 03E15